

### Abstract of the Disclosure

A fuel amount control system of a fuel cell includes a fuel storage unit that stores the fuel to be supplied to the anode, a diluent storage unit that stores a diluent generated as a result of the chemical reaction in the cathode, a fuel mixing unit that mixes the fuel supplied from the fuel storage unit and the diluent supplied from the diluent storage unit to supply a fuel mixture solution to the anode, a pressure sensor located inside the fuel mixing unit, which has a various volume that depends on the concentration of the fuel in the fuel mixture solution and outputs an electrical signal according to a volume variation, and a control unit that receives the electrical signal output from the pressure sensor and outputs electrical signals to open and close the fuel storage unit and the diluent storage unit such that the fuel mixture solution having an appropriate concentration is supplied from the fuel mixing unit to the fuel cell stack.